

2012

The case of Drew: An animated social narrative intervention to improve the social skills of a student with a mild intellectual disability (MID)

Alyce Shepherd

University of Wollongong, ats997@uow.edu.au

Follow this and additional works at: <https://ro.uow.edu.au/jseem>

Recommended Citation

Shepherd, Alyce, The case of Drew: An animated social narrative intervention to improve the social skills of a student with a mild intellectual disability (MID), *Journal of Student Engagement: Education Matters*, 2(1), 2012, 65-77.

Available at: <https://ro.uow.edu.au/jseem/vol2/iss1/12>

The case of Drew: An animated social narrative intervention to improve the social skills of a student with a mild intellectual disability (MID)

Abstract

This paper presents the case of nine-year-old Drew, a Year 3 Primary School student who has a Mild Intellectual Disability (MID). Drew is one of four individual case studies from a research project that examined the potential of students with MID co-constructing their own animated social narratives about being safe (keeping hands and feet to one-self) using the teaching approach of 'slowmation' (abbreviated from 'slow animation'). This paper explores the extent that Drew was able to use slowmation to co-construct an animated social narrative and the ways in which this social skills intervention supported his understanding and application of safe behaviour at school. Drew worked one-on-one with a researcher across three forty-minute lessons to co-construct an animated social narrative. Data was gathered from audio-recorded, semistructured student and teacher interviews, video recorded lesson observations, student work samples, and student school behaviour records. Analysis of data revealed that Drew was able to successfully co-construct an animated social narrative about being safe at school by engaging with slowmation processes and that after co-construction his understanding of ways to be safe and his application of safe behaviour at school improved.



The case of Drew: An animated social narrative intervention to improve the social skills of a student with a mild intellectual disability (MID)

Alyce Shepherd

Bachelor of Primary Education (Honours), Faculty of Education, University of Wollongong, Australia

Honours supervisors: Associate Professor Garry Hoban and Dr Roselyn Dixon

This paper presents the case of nine-year-old Drew, a Year 3 Primary School student who has a Mild Intellectual Disability (MID). Drew is one of four individual case studies from a research project that examined the potential of students with MID co-constructing their own animated social narratives about being safe (keeping hands and feet to one-self) using the teaching approach of ‘slowmation’ (abbreviated from ‘slow animation’). This paper explores the extent that Drew was able to use slowmation to co-construct an animated social narrative and the ways in which this social skills intervention supported his understanding and application of safe behaviour at school. Drew worked one-on-one with a researcher across three forty-minute lessons to co-construct an animated social narrative. Data was gathered from audio-recorded, semi-structured student and teacher interviews, video recorded lesson observations, student work samples, and student school behaviour records. Analysis of data revealed that Drew was able to successfully co-construct an animated social narrative about being safe at school by engaging with slowmation processes and that after co-construction his understanding of ways to be safe and his application of safe behaviour at school improved.

Keywords: special education; mild intellectual disability; slowmation; animation; social narrative; safe behaviour; intervention

Introduction

This paper explores the case study of nine-year-old Drew. Drew is a Year 3 student with a Mild Intellectual Disability (MID) who attends an IM (Intellectually Mild) support class within an Australian public primary school. Research was conducted in 2011 as part of an honours study to investigate ways in which to enhance the understanding and application of safe behaviour at school (keeping hands and feet to oneself) for Drew and three of his peers. The innovative social skills intervention of animated social narratives using the teaching approach of ‘slowmation’ (abbreviated from ‘slow animation’) was implemented across three forty-minute lessons between the researcher and each individual student as a means of addressing this need. This paper explores the extent that Drew was able to use slowmation to co-construct an animated social narrative and the ways in which doing so supported his understanding and application of safe behaviour at school.



Background to the study

According to the Australian Institute of Health and Welfare, approximately 3% of Australians have an intellectual disability – with the greatest number of people having a MID (AIHW, 2008). School students make up a large component of this 3% (AIHW, 2008). Such students require special assistance and provisions in the school setting to achieve optimal social, behavioural and academic outcomes (AAIDD, 2011; AIHW, 2008; NSW DET, 2010). It is common for students who have MID to require support with their development of social skills, including practical teaching about the following of school rules (AAIDD, 2011; APA, 2000; WHO, 2001). Multiple studies have explored the value of social skills interventions for students on the autism spectrum (Ali & Frederickson, 2006; Gray, 1995; 1998; Mandasari, Lu & Theng, 2011; McConnell, 2002; Reynhout & Carter, 2006; Sansosti, Powell-Smith & Kincaid, 2004; Scattone, 2007). While it is suggested that many of these interventions may benefit the social development of students with mild forms of intellectual disability (Vaughn *et al.*, 2003), there remains an absence of research supporting this claim. Rather, there are few studies concerning the use of social skills interventions with students who have MID.

Social Stories are a commonly employed social skills teaching strategy in the field of Special Education despite limited empirical confirmation of their effectiveness (Reynhout & Carter, 2007). Social Stories are short narratives that are specially designed for the teaching of social skills to students who have developmental disorders (Gray, 2003; 2010). These narratives follow a specific design and structure to “describe a situation, skill, or concept in terms of relevant social cues, perspectives, and common responses” (Gray, 2003, p.2). While most research surrounds the use of Social Stories with students who have autism spectrum disorders (Ali & Frederickson, 2006; Gray, 1995; 1998; Gray & Garand, 1993; Reynhout & Carter, 2006; Sansosti, Powell-Smith & Kincaid, 2004), Reynhout and Carter (2009) reveal usage by teachers as a means of supporting students with MID who experience social skill developmental difficulties.

This study further explores the potential of social narratives as a means of teaching social skills to students with MID specifically. Moreover, this study is the first to explore students’ construction of social narratives, and in the form of animation. By definition traditional Social Stories are created by a teacher or expert for a student and read to that student (Gray, 2003; 2010). In this study students participated in the construction of their own social narrative and animated it using the teaching approach of ‘slowmation’.

‘Slowmation’ (abbreviated from ‘slow animation’) is a basic way for students to plan and generate their own stop-motion animation (played at the slow pace of two frames/second) to communicate a story or concept (Hoban, 2005; 2007; Hoban & Nielsen, 2010). Slowmation construction involves students in the design of a sequence of representations (storyboard, models, photographs and narration) that break concepts down into segments and enable students to think with various modalities (Hoban, 2005; 2007; Hoban & Nielsen, 2010). Despite such a strategy of segmenting, representing and re-representing information being reported as fundamental to effective teaching and learning of students with MID (AAIDD, 2011;



AIHW, 2008), this study marks the first application of slowmation to the field of Special Education.

By using the teaching approach of slowmation as a means of students with MID co-constructing their own animated social narrative, this study proposed to enable students to experience the reported benefits of computer-assisted instruction (Mancil, Haydon & Whitby, 2009; Mandasari, Lu & Theng, 2011; Sansosti & Powell-Smith, 2008) and existing social skills interventions such as visually cued instruction and modeling (Ali & Frederickson, 2006; Ayres & Langone, 2005; Bellini & Akullian, 2007; Dowrick, 1999; Hitchcock, Dowrick & Prater, 2003; Reynhout & Carter, 2006; Sansosti, Powell-Smith & Kincaid, 2004; Scattone, 2007; Thiemann & Goldstein, 2001).

Methodology

This qualitative study employed a multiple case study design (Creswell, 2007; 2009; Mertens, 2010). The case of Drew is one of four case studies who worked one-on-one with the researcher (separately) across three 40-minute lessons to co-construct a personalised animated social narrative (the intervention). The purpose of this study was to examine how each case study would engage with slowmation processes of animated social narrative co-construction and how co-construction would impact on students' understanding and application of positive social behaviour regarding being safe at school (the social skill of focus in the animated social narratives). Mertens (2010) explains that research, like this study, that proposes to investigate the 'how' aspects of a particular phenomenon are most suited to a case study design. Moreover, focusing on four individual student case studies as opposed to one case study consisting of four student participants was fundamental to providing a detailed investigation into the complexity and individuality of each student case (Kervin *et al.*, 2006; Stake, 2006) thus considering the unique nature of each individual's degree of MID, behavioural and social skills, literacy levels, interests and abilities.

Consistent with a multiple case study design this study included various points of data so as to include multiple perspectives and illuminate the diversity of students' learning experiences (Corbin & Strauss, 2008; Creswell, 2009; Stake, 2006). The methods used to gather data for this study consisted of a combination of semi-structured student and teacher interviews, lesson observations, student work samples and student school behaviour records related to adherence to Georgia-Blue Public School's 'Be Safe' school rule (in regards to keeping hands and feet to oneself). Data were gathered across three phases, and collection methods were designed to capture information addressing specific aspects of the study's research questions. Table 1 summarises data collection and analysis phases.

Discussion of intervention outcomes

Table 2 provides an overview of this study's findings in relation to Drew's extent of animated social narrative construction and the impact of this intervention on his understanding and application of safe behaviour at school. Aspects of these findings are further discussed as follows.



Table 1: Overview of data collection and analysis phases

Phase	Purpose	Data Collection Methods	Data Analysis
Phase 1: Preparation Baseline data collection	To ascertain Drew's understanding and application of safe behaviour before the intervention.	<ul style="list-style-type: none"> 10-minute semi-structured interview with Drew regarding his understanding of being safe. Collection of Drew's behaviour records related to adherence to 'Be Safe' school rule (dating back to 3 weeks prior to intervention). 	<ul style="list-style-type: none"> Coding of transcribed interview responses using Thematic Analysis (Braun & Clarke, 2006) to be compared to final interview responses regarding understanding of the 'Be Safe' school rule. Graphing of behaviour records in terms of unsafe incident frequency before intervention (to be compared with graphed records from during and after the intervention)
Phase 2: The Intervention 3 x 40-minute lessons with Drew during which his co-construction of an animated social narrative takes place	To examine Drew's extent of construction and the impact of this on his understanding of safe behaviour.	<ul style="list-style-type: none"> Video recorded observations of Drew during lessons. Photography of Drew's work throughout lessons. 10-minute semi-structured interview with Drew (consisting of questions from previous interview). 	<ul style="list-style-type: none"> Open and axial coding (Corbin & Strauss, 2008) of observation data in relation to the participation of Drew throughout the three lessons of animated social narrative co-construction. Work samples used to support interview and observation data (triangulation) and analysed in relation to evidence of student learning/participation.
Phase 3: Follow-up Collection of behavioural data from the implementation of the intervention onwards	To identify Drew's behaviour after the intervention and ascertain potential impacts.	<ul style="list-style-type: none"> Collection of Drew's behaviour records related to adherence to 'Be Safe' school rule (from beginning of intervention up until 3 weeks after the intervention) 1 x 20-minute teacher interview regarding impact of intervention. 	<ul style="list-style-type: none"> Graphing of behaviour records in terms of unsafe incident frequency from during and after the intervention to compare with records graphed during phase 1. Teacher interview responses used to support behavioural records (triangulation).



Table 2: Findings related to the case of Drew

Drew's Extent of Construction	Drew's Understanding	Drew's Behaviour
<ul style="list-style-type: none"> Storyboarded 4 drawings and 4 sentences. Drew background, characters and story titles. Executed and explained character movements and photographs- requiring guidance to focus and use camera. Verbally planned, practised and recorded each narration sentence and advised where to place audio files in relation to photographs. Made slide-speed suggestions. Expressed engagement and pride in lessons. 	<ul style="list-style-type: none"> Firm understanding of safe behaviour and its importance before intervention. Researcher's strategy list helped Drew consider personal ways to be safe. Described double the amount of strategies for being safe after the intervention (from 3 to 6), with 5 of 6 featured in social narrative). 	<ul style="list-style-type: none"> Decrease in documented unsafe incidents since intervention – incidents occurring after intervention constituted less than a quarter of those before (9 before, 3 during and 2 after). Applied the strategies: 'walk away' and 'talk to a teacher' (in social narrative) after intervention. Content 'affected him personally'.

Drew's extent of construction

Findings related to Drew's extent of animated social narrative construction emerged as the three individual lessons (the intervention) were implemented by the researcher. These results revealed that Drew was able to co-construct an animated social narrative by engaging with the following three slowmation processes.

Storyboard

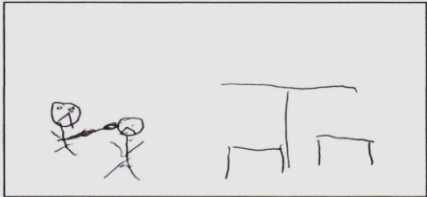
Drew was guided by a template in lesson 1 (see Figure 1) as he storyboarded four scenes for his social narrative about being safe at school. The template posed questions regarding what constitutes safe and unsafe behaviour and Drew's responses in the form of drawings and supporting sentences constituted the storyline of his social narrative. Drew was mostly able to read the questions posed by the template he was given, and with spelling and sentence structure support from the researcher, Drew produced a written response to each question, thus describing each scene of his social narrative. Drew also depicted each scene pictorially by drawing in the boxes of the template beside his sentences. Drew's storyboard consisting of sentences and drawings is featured in Figure 1.

When revising his storyboard in lesson 2 prior to the photo-taking phase of slowmation construction, Drew added the strategy of "walking away" to scene 3 of



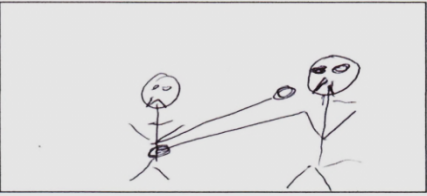
his storyboard. The researcher then read aloud a list of strategies that she had produced, and from this list, Drew chose the strategies “take a deep breath” and “play with other friends” for inclusion in his social narrative. Presenting Drew with this list exposed him to a variety of strategies as he was only able to list three on his own. Moreover, it ensured that the strategies added to his storyboard were those that were personally relevant and achievable.

What unsafe thing have you seen someone in the playground do to someone else?



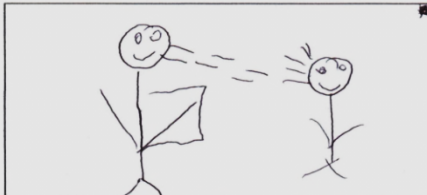
I saw A boy
punching Another
boy.

Why did they do it?



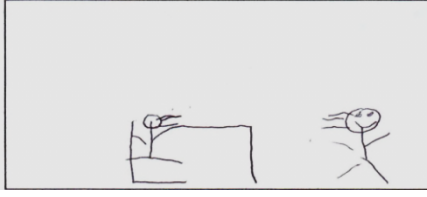
because He.
was. Punching.
first and He was
cranky.

What should they do? What is the school rule about safe behaviour?



toll the teacher

How will I be safe in the playground?



talk to the
Principal about
my friend.

Figure 1: Drew's storyboard

Character manipulation and photography

In preparation for photographing in lesson 2, Drew showed initiative in choosing a green and grey cardboard background and selecting, drawing and decorating 2D paper cut-out characters (made by the researcher) for his social narrative. Drew was then able to successfully re-enact his story using these resources. After only being shown once by the researcher how to manipulate 1 cm movements in between photographing, Drew did so without assistance. Moreover, Drew demonstrated ability to independently make, execute and justify character movement and photography decisions. Drew's photographed strategies of walking away, taking a deep breath, and



playing with other friends as a means of staying safe at school are depicted in Figure 2.

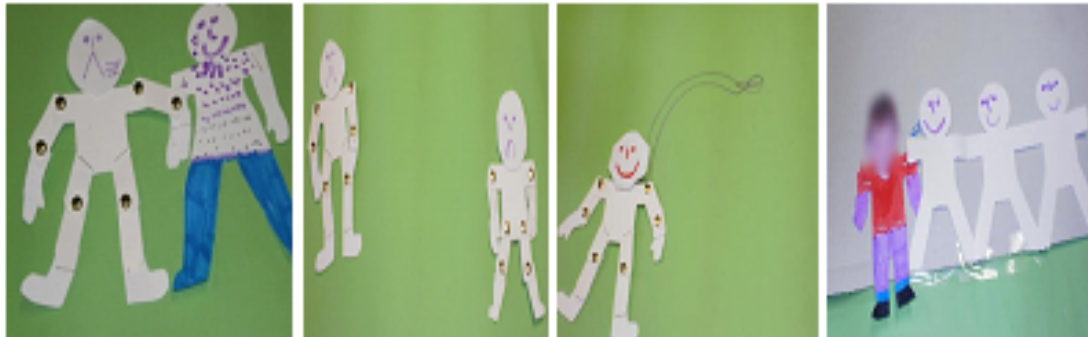


Figure 2: *Drew's scene 3 and 4 photographs of strategies*

The most researcher assistance that Drew required during this phase of slowmotion construction related to Drew's use of a digital camera. The researcher had to provide Drew with ongoing verbal prompts and camera navigation support as he struggled to keep the camera still and press the capture button long enough to take a photograph. Such support also extended to reminding Drew to allow for appropriate pausing in between photo-taking. This guidance was necessary as in his observable excitement and eagerness to manipulate the 2D characters, Drew had a tendency to move them immediately after pressing the camera's capture button before the camera flashed.

Drew also required assistance from the researcher in the form of reminders and guidance to stay on task and interpret his storyboard. While Drew's storyboard prompted his memory of the storyline, he frequently got carried away manipulating and decorating his characters. He therefore required verbal encouragement from the researcher to stay on task, and to stick to the story he had planned.

Narration

The researcher uploaded Drew's photographs to Windows Movie Maker to play at a slide speed of approximately 2 frames per second in lesson 3. Upon showing Drew the slideshow of the photographs that he had taken in lesson 2, Drew was able to provide an accurate and detailed recount of each scene without teacher prompting. Drew was also able to plan his own narration by verbally formulating sentences. Drew practiced such sentences and recorded them separately into the computer microphone. Table 3 shows Drew's designed narration, the segments in which it was recorded, and the amount of times that each segment was practised and recorded until accurate. As can be seen in Table 3, Drew was comfortable with the recording process to the point that he did not feel the need to practise three sentences, and was able to achieve a perfect recording of them on his first attempt. The sentences in which Drew had to practise and re-record the most were those that were long and contained words that he found difficult to pronounce, due to his speech sound impairment.

The researcher uploaded Drew's numbered audio narration files to Windows Movie Maker to play alongside his photographs. Drew advised the researcher of



where to place his audio files in relation to the photographs, as evidenced by his comment “that one should go there because that is where the teacher comes into it”. This comment demonstrated initiative and revealed his understanding of how the images and narration are supposed to match. Such understanding was further revealed as Drew provided slide-speed suggestions such as, “I want to make that bit quicker because the words are fast there”. After the researcher applied Drew’s slide-speed suggestions, Drew watched his animated social narrative from the start. During this viewing, Drew expressed pride in what he had accomplished exclaiming, “that is good I am happy with that!”

Table 3: Drew’s narration

Drew’s Recorded Narration Segments	No. Practises	No. Recordings
Be safe	1	1
One day this kid came over and punched a kid in the face	2	1
He fell over	1	1
He punched a kid because he felt angry.	2	3
What he should have done was walk away	3	1
Or he should have told the teacher he needs a rest	2	2
He should have took a deep breath so he can feel better	2	3
and go play with other friends	1	2
Drew will be safe in the playground	0	1
by talking to the teacher	0	1
when he feels angry	1	2
And walk away instead of punching	2	1
take a deep breath	2	2
and play with other friends	1	1
This is going to make him happy because he’s going to be safe in the playground	3	2
Be safe	0	1

Drew’s understanding of safe behaviour

To identify if Drew’s understanding of social behaviour regarding being safe at school had changed since the intervention, the researcher interviewed Drew prior to, and after his co-construction of an animated social narrative. A comparison of Drew’s interview responses, as well as his work samples and dialogue during lessons, revealed that Drew’s understanding had improved since the intervention.

The extent of Drew’s growth in understanding about strategies for staying safe at school, can be seen by the greater number and more elaborate strategies that he was able to discuss in his final interview when compared with those mentioned in interview 1 (prior to the intervention). After having made his own animated social narrative Drew described double the amount of strategies (Table 4). As displayed by



this table, prior to the study Drew expressed awareness of three alternatives to unsafe behaviour, and six more detailed strategies at the completion of the animated social narrative intervention.

Table 4: Comparison of Drew’s understanding of strategies for being safe

Before Intervention (Interview 1)	After Intervention (Interview 2)
<ul style="list-style-type: none"> • “Go tell the teacher” • “Tell the person: Stop it, I don’t like it” • “Walk away” 	<ul style="list-style-type: none"> • “Rest with a teacher” • “Tell the teacher I feel cranky” • “Walk away” • “Go make new friends” • “Play with your other friends” • “Have a breather”

Drew’s safe behaviour

Analysis of Drew’s school behaviour records relating to documented incidents of unsafe behaviour in line with the interview responses of Drew’s teacher revealed that since the intervention, there was a decline in Drew’s unsafe behaviour at school. Results also revealed an increase in Drew’s adoption of strategies for staying safe since the intervention.

In the five weeks after the intervention of Drew co-constructing an animated social narrative, behaviour records showed him to be involved in only two unsafe incidents at school. This figure is considerably less than Drew’s nine documented unsafe experiences prior to the intervention. As shown in Figure 3, the incidents that occurred after Drew’s co-construction of an animated social narrative are the equivalent to less than a quarter of those that took place beforehand.

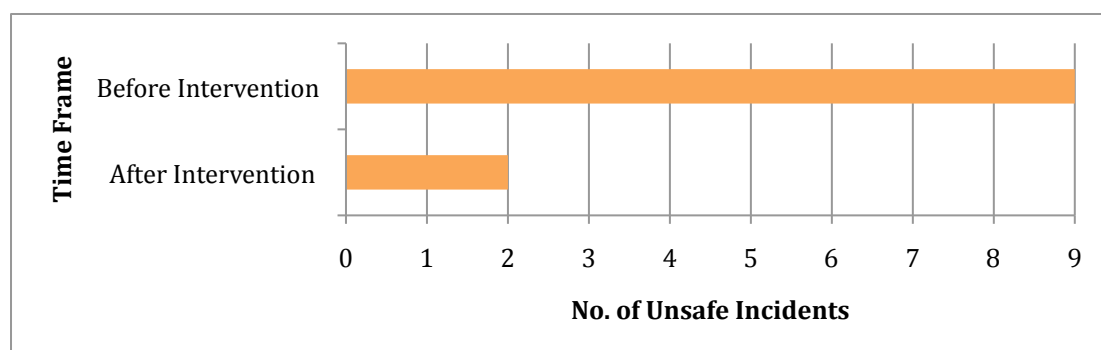


Figure 3: Comparison of Drew’s unsafe incidents before and after the intervention

Behavioural data reveals that four out of the five weeks following the intervention (80%), Drew exhibited positive social behaviour with regards to being



safe. Figure 4 displays the significant decline in Drew's unsafe behaviour frequency since the intervention.

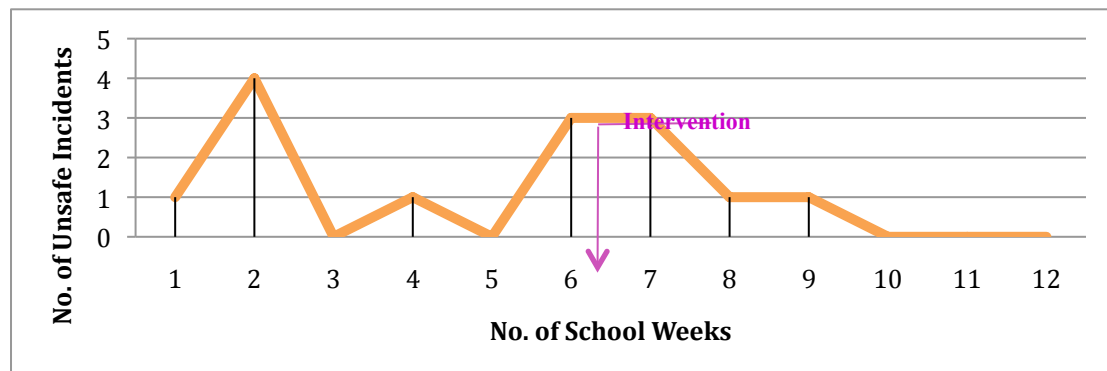


Figure 4: Drew's unsafe behaviour frequency across twelve weeks

While it is not justified to attribute Drew's enhanced safe behaviour to the animated social narrative intervention alone, Drew's teacher's following comment sheds light on its value and potential behavioural benefits:

It has been an eye opener for me ... I think there is something very powerful about the ownership that students get from being a part of their movie. You see, Drew is probably more likely to take in what you taught him because it was engaging and meant something to him personally ...

Drew's teacher also revealed that not only had Drew's behaviour since the intervention improved since making his animated social narrative, but he had also endeavoured to adopt the strategies featured in his social narrative. Drew's teacher explained:

There was a situation recently in which a boy was throwing rocks at Drew and surprisingly he didn't retaliate. Whether that was because of his slowmation or not I can't be sure, but instead he walked away and told the teacher ... It also seems lately that he has been talking more openly about his feelings. While this isn't always before an incident it is definitely a step in the right direction because he is usually defensive and won't admit that a situation often occurs because of his anger and frustration.

Conclusion

This study explored the use of slowmation as a technique to support Drew co-constructing an animated social narrative about being safe at school. It examined to what extent he could engage with slowmation processes, and the impact of the animated social narrative intervention on his understanding and application of safe behaviour. Data gathered from lesson observations and student work samples revealed that Drew was able to successfully co-construct an animated social narrative by engaging with the slowmation processes of storyboarding, manipulating and photographing 2D paper characters, and audio recording a narration. Analysis of



student interview responses, lesson observations and student work sample data indicated that Drew's co-construction of an animated social narrative supported his understanding of social behaviour regarding being safe at school. The extent of Drew's enhanced understanding of safe behaviour was demonstrated by his ability after the intervention to identify a larger number of strategies for staying safe, and explain these in greater detail than he was able to prior to the intervention. Drew's school behavioural records and the interview responses of Drew's teacher also revealed that there were positive changes in Drew's social behaviour with regards playing safely since the intervention took place, and that Drew's enhanced understanding of strategies for staying safe may have influenced his application of safe behaviour.

While animated social narrative construction through use of slowmation cannot be solely responsible for Drew's enhanced safe understandings and behaviours, this study shows that such an approach to teach social skills has promise. The theoretical framework underpinning slowmation proposes that by breaking concepts down into steps and revisiting them in the form of five multimodal representations, slowmation solidifies understandings and motivates students to think in unique ways (Hoban, 2005; 2007; Hoban, Loughran & Nielsen, 2011; Hoban & Nielsen, 2010). This approach is particularly conducive to the learning preferences and abilities of students with MID (AAIDD, 2011; AIHW, 2008; Wen, 1997). Furthermore, as students engage with the slowmation stages of construction to create and animate their own social narrative, they experience the benefits of the features of existing interventions including visually cued instruction, modeling, and more yet to be thoroughly examined by research. This research has also revealed the value and potential of slowmation as a means of promoting the internalisation and transferability of knowledge to practice. This is a particularly important finding as students who have MID experience challenges with regards to comprehending and applying information.

References

- AAIDD (American Association on Intellectual and Developmental Disabilities) (2011). AAIDD: American Association on Intellectual and Developmental Disabilities (homepage). URL: <http://www.aamr.org/> (accessed 18 August 2011).
- AIHW (Australian Institute of Health and Welfare) (2008). *Disability in Australia: Intellectual disability*. Bulletin no. 67. Cat. no. AUS 110. Canberra: AIHW.
- Ali, S. & Frederickson, N. (2006). 'Investigating the evidence base of Social Stories'. *Educational Psychology in Practice*, 22 (4), 355–377.
- APA (American Psychiatric Association) (2000). *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV)*. Washington, DC: APA.
- Ayres, K.M. & Langone, J. (2005). 'Intervention and instruction with video for students with autism: A review of the literature'. *Education and Training in Developmental Disabilities*, 40 (2), 183–196.



- Bellini, S. & Akullian, J. (2007). 'A meta-analysis of video modeling and video self-modeling interventions for children and adolescents with autism spectrum disorders'. *Exceptional Children*, 73 (3), 264–287.
- Braun, V. & Clarke, V. (2006). 'Using thematic analysis in psychology'. *Qualitative Research in Psychology*, 3 (2) 77–101.
- Corbin, J. & Strauss, A. (2008). *Basics of Qualitative Research: Techniques and procedures for developing grounded theory* (3rd edn). Thousand Oaks, CA: SAGE.
- Creswell, J.W. (2007). *Qualitative Inquiry and Research Design: Choosing among five traditions* (2nd edn). Thousand Oaks, CA: SAGE.
- Creswell, J.W. (2009). *Research Design: Qualitative, quantitative, and mixed methods approaches* (3rd edn). Thousand Oaks, CA: SAGE.
- Dowrick, P. (1999). 'A review of self-modeling and related intervention'. *Applied and Preventative Psychology*, 8 (1), 23–39.
- Gray, C. (1995). 'Teaching children with autism to read social situations'. In K.A. Quill (ed.), *Teaching Children with Autism* (pp.219–241). New York: Delmar.
- Gray, C. (1998). 'Social stories and comic strip conversations with students with Asperger syndrome and high-functioning autism'. In E. Schopler, G.B. Mesibov & L.J. Kuncie (eds), *Asperger Syndrome or High-Functioning Autism?* (pp.167–198). New York: Plenum.
- Gray, C. (2003). 'Social Stories 10.0'. *Jenison Autism Journal*, 15 (4), 1–28.
- Gray, C. (2010). *The New Social Story™ Book* (10th anniversary edn). Arlington, TX: Future Horizons.
- Gray, C. & Garand, J.D. (1993). 'Social stories: Improving responses of students with autism with accurate social information'. *Focus on Autistic Behaviour*, 8 (1), 1–10.
- Hitchcock, C.H., Dowrick, P. & Prater, M.A. (2003). 'Video self-modeling in school based settings: A review'. *Remedial and Special Education*, 24 (1), 36–56.
- Hoban, G. (2005). 'From claymation to slowmation: A teaching procedure to develop students' science understandings'. *Teaching Science*, 51 (2), 26–30.
- Hoban, G. (2007). 'Using slowmation to engage preservice elementary teachers in understanding science content knowledge'. *Contemporary Issues in Technology and Teacher Education*, 7 (2), 1–9.
- Hoban, G., Loughran, J. & Nielsen, W. (2011). 'Slowmation: Preservice elementary teachers representing science knowledge through creating multimodal digital animations'. *Journal of Research in Science Teaching*, 48 (9), 985–1009.
- Hoban, G. & Nielsen, W. (2010). 'The 5 Rs: A new teaching approach to encourage slowmations (student-generated animations) of science concepts'. *Teaching Science*, 56 (3), 33–38.
- Kervin, L., Vialle, W., Herrington, J. & Okely, T. (2006). *Research for Educators*. Melbourne: Thomson Social Science Press.
- Mancil, G.R., Haydon, T. & Whitby, P. (2009). 'Differentiated effects of paper and computer-assisted social stories (TM) on inappropriate behaviour in children with autism'. *Focus on Autism and Other Developmental Disabilities*, 20 (10), 1–11.
- Mandasari, V., Lu, M.V. & Theng, L.B. (2011). '2D animated social story for assisting social skills learning of children with autism spectrum disorder'. In



- L. Theng (ed.), *Assistive and Augmentive Communication for the Disabled: Intelligent technologies for communication, learning and teaching* (pp. 1–24). New York: Information Science Reference.
- McConnell, S.R. (2002). 'Interventions to facilitate interaction for young children with autism: Review of available research and recommendations for educational intervention and future research'. *Journal of Autism and Developmental Disorders*, 32 (5), 351–372.
- Mertens, D.M. (2010). *Research and Evaluation in Education and Psychology: Integrating diversity with quantitative, qualitative, and mixed methods* (3rd edn). Thousand Oaks, CA: SAGE.
- NSW DET (NSW Department of Education and Training) (2010). *Special Education Classes and Provisions*. URL: https://www.det.nsw.edu.au/detresources/about-us/statistics-and-research/key-statistics-and-reports/spec_ed.pdf (accessed 15 May 2011).
- Reynhout, G. & Carter, M. (2006). 'Social stories for children with disabilities'. *Journal of Autism and Developmental Disorders*, 36 (4), 445–469.
- Reynhout, G. & Carter, M. (2007). 'Social Story (TM) efficacy with a child with autism spectrum disorder and moderate intellectual disability'. *Focus on Autism and Other Developmental Disabilities*, 22 (3), 173–182.
- Reynhout, G. & Carter, M. (2009). 'The use of social stories by teachers and their perceived efficacy'. *Research in Autism Spectrum Disorders*, 3 (1), 232–251.
- Sansosti, F.J. & Powell-Smith, K.A. (2008). 'Using computer-presented social stories and video models to increase the social communication skills of children with high-functioning autism spectrum disorders'. *Journal of Positive Behaviour Interventions*, 10 (3), 162–178.
- Sansosti, F.J., Powell-Smith, K.A. & Kincaid, D. (2004). 'A research synthesis of social story interventions for children with autism spectrum disorders'. *Focus on Autism and Other Development Disabilities*, 19 (4), 194–204.
- Scattone, D. (2007). 'Social skills interventions for children with autism'. *Psychology in the Schools*, 44 (7), 717–726.
- Stake, R.E. (2006). *Multiple Case Study Analysis*. New York: Guilford.
- Thiemann, K.S. & Goldstein, H. (2001). 'Social stories, written text cues, and video feedback: Effects on social communication of children with autism'. *Journal of Applied Behavior Analysis*, 34 (4), 425–446.
- Vaughn, S., Kim, A., Morris Sloan, C.V., Hughes, M.T., Elbaum, B. & Sridhar, D. (2003). 'Social skills interventions for young children with disabilities: A synthesis of group design studies'. *Remedial and Special Education*, 24 (1), 2–15.
- Wen, X. (1997). *The Definition and Prevalence of Intellectual Disability in Australia*. Cat. No. DIS2. Canberra: AIHW.
- WHO (World Health Organisation) (2001). *International Classification of Functioning, Disability, and Health (ICF)*. Geneva: WHO.